





&	AND	CONST. PMT.	CONSTRUCTION PERMIT
@	AT	COR.	CORNER
A. A. D. T.	ANNUAL AVERAGE DAILY TRAFFIC	CORR.	CORRECTED OR CORRUGATION
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	COV.	COVER
		C. P.	CATCH POINT
AB.	ABRUPT	CR.	CRUSHED OR CREEK
A. C.	ALUMINUM CAP OR ASPHALT CEMENT	CRS.	COURSE
ADD. EXC.	ADDITIONAL EXCAVATION	CS	CURVE TO SPIRAL
ADJ.	ADJUSTED	C. S. F.	COMBINATION SCALE FACTOR
A. D. T.	AVERAGE DAILY TRAFFIC	CSP	CORRUGATED STEEL PIPE
AGC	ASSOCIATED GENERAL CONTRACTORS OF AMERICA	CSPA	CORRUGATED STEEL PIPE ARCH
AGG.	AGGREGATE	CT.	COURT
AH.	AHEAD	C. T. B.	CEMENT TREATED BASE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	CTR.	CENTER
APP.	APPROACH	CTS	CRUSHED TOP SURFACING
APPL.	APPLICATION	CULV.	CULVERT
APPROX.	APPROXIMATE		
ARTBA	AMERICAN ROAD AND TRANSPORTATION ROAD BUILDERS	D	DISTRIBUTION OF TRAFFIC
		DBL.	DOUBLE
ASPH.	ASPHALT	D. D.	DOWN DRAIN
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	DE	DIFFERENCE IN ELEVATION
AVE.	AVENUE	DEFL.	DEFLECTION
AVG.	AVERAGE	DESC.	DESCRIPTION
AWS	AMERICAN WELDING SOCIETY	DEST.	DESTROYED
AZ.	AZIMUTH	DET.	DETOUR OR DETAIL
		DETC.	DETECTOR
BAL.	BALANCE	D. H.	DRILL HOLE
BBL.	BARREL	D. H. V.	DESIGN HOURLY VOLUME
B. C.	BRASS CAP	D. I.	DROP INLET
B. C. R.	BEGIN CURB RETURN	DIA.	DIAMETER
B. E.	BRIDGE END	DIST.	DISTANCE OR DISTRICT
BEG.	BEGIN	DN.	DOWN
BIT.	BITUMINOUS OR BITUMEN	DP.	DEEP
BK.	BACK OR BANK	DR.	DRAIN OR DRIVE
BLDG.	BUILDING	DT.	DITCH
BLK.	BLOCK	DTL.	DETAILED
B. L. M.	U. S. BUREAU OF LAND MANAGEMENT	DWG.	DRAWING
BLVD.	BOULEVARD	DY.	DAYLIGHT
B. M.	BENCH MARK		
BNDRY.	BOUNDARY	E	EAST OR EXTERNAL DISTANCE
BOT.	BOTTOM	EB	EASTBOUND
BR.	BRIDGE	E. C. R.	END CURB RETURN
B. R.	BASE OF RAIL	EDM	ELECTRONIC DISTANCE MEASUREMENT
BRG.	BEARING	E. G.	EDGE OF GUTTER
B. S.	BACKSIGHT	ELEV. OR EL.	ELEVATION
B. S. T.	BITUMINOUS SURFACE TREATMENT	ELONG.	ELONGATED
B. W. FE.	BARBED WIRE FENCE	ELY.	EASTERLY
		EMB.	EMBANKMENT
C	CUT	EMUL.	EMULSIFIED
C/A	CONTROL OF ACCESS	E. O.	EDGE OF OIL
CALC.	CALCULATED	E. P.	EDGE OF PAVEMENT
CAP	CORRUGATED ALUMINUM PIPE	EQ.	EQUATION
CATV	CABLE TV	Es	EXTERNAL DISTANCE (WITH SPIRALS)
CB.	CURB	E. S.	EDGE OF SHOULDER
C. B.	CATCH BASIN	ESMT. OR EASE.	EASEMENT
C. B. W.	CONCRETE BLOCK WALL	ETW	EDGE OF TRAVELED WAY
C. C.	CLOSING CORNER	EW.	END WALL
CDTN.	CONDITION	EX.	EXISTING
CEM.	CEMENT	EXC.	EXCAVATION
C&G	CURB & GUTTER	EXT.	EXTENSION
CH.	CHANNEL OR CHAIN	EXWY.	EXPRESSWAY
CH. CH.	CHANNEL CHANGE		
CHD.	CHORD	F	FILL
CHIS. "x"	CHISELED CROSS	F. A.	FEDERAL AID
C. I.	CURB INLET	F. C.	FLOOD CONTROL
CIR.	CIRCLE	FD.	FOUND
CL.	CLASS OR CLEARANCE	FDN.	FOUNDATION
CL - 1.2F, 1.5F	CHAIN LINK FENCE (W/ HEIGHT)	FE.	FENCE
C/L OR C	CENTERLINE	FERT.	FERTILIZER
CMP	CORRUGATED METAL PIPE		
C. N.	CONCRETE NAIL		
CO.	COUNTY OR COMPANY		
C. O.	CLEAN OUT		
COMP.	COMPACTION		
CONC.	CONCRETE		
COND. (TEL.)	CONDUIT (SPECIFY TYPE)		
CONN.	CONNECTION		
CONST.	CONSTRUCTION		



DETAILED DRAWING	
REFERENCE STANDARD SPEC. SECTION 101	DWG. NO. 101-05
ABBREVIATIONS	
EFFECTIVE: DECEMBER 2002	
 MONTANA DEPARTMENT OF TRANSPORTATION  MONTANA CADD	

FETS	FLARED END TERMINAL SECTION	m	METER
F. G.	FINISHED GRADE	m²	SQUARE METER
F. G. S.	FINISHED GRADE STAKE	m³	CUBIC METER
F. H.	FIRE HYDRANT	mm	MILLIMETER
FHWA	FEDERAL HIGHWAY ADMINISTRATION	mm²	SQUARE MILLIMETER
FIN.	FINISH	MATL.	MATERIAL
FL.	FLUSH	MAX.	MAXIMUM
F. L.	FLOW LINE	MC	MEDIUM CURING
F. O.	FIBER OPTIC CABLE	MDT	MONTANA DEPARTMENT OF TRANSPORTATION
F. P.	FENCE POST	MEAS.	MEASURED
FR	FRONTAGE	MED.	MEDIAN
FR. RD.	FRONTAGE ROAD	MH.	MANHOLE
F. S.	FORESIGHT	MIN.	MINIMUM, MINERAL OR MINUTE
FTG.	FOOTING	MISC.	MISCELLANEOUS
FUT.	FUTURE	MKR.	MARKER
FWY.	FREEWAY	M. L.	MAINLINE
		MNCPL.	MUNICIPAL
g	GRAM	M. O.	MID ORDINATE
G	GRADING	MON.	MONUMENT
G.A.	GAGE	MPC	MID-POINT OF CURVE
GALV.	GALVANIZED	MUTCD	MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES
GAR.	GARAGE		
GEOD.	GEODETIC		
G. L.	GAS LINE	N	NORTH
G. L. O.	GENERAL LAND OFFICE	NB	NORTHBOUND
GPS	GLOBAL POSITIONING SYSTEM	N. C.	NORMAL CROWN
GR.	GRADE	N. E.	NORTHEAST
G. R.	GUARDRAIL	N. G.	NATURAL GAS
GRD.	GRID	N. G. S.	NATIONAL GEODETIC SURVEY
GRND.	GROUND	NL.	NAIL
GR. SEP.	GRADE SEPARATION	NLY.	NORTHERLY
G. S.	GRAVEL SURFACING	NO. OR #	NUMBER
GSP	GALVANIZED STEEL PIPE	N. W.	NORTHWEST
GTR.	GUTTER	N. W. EL.	NORMAL WATER ELEVATION
G. V.	GAS VALVE		
ha	HECTARE	O. OR O/S	OFFSET
HDWL.	HEADWALL	O. C.	ON CENTERS OR OVERHEAD CROSSING
HG.	HEADGATE	O. D.	OUTSIDE DIAMETER
H. I.	HEIGHT OF INSTRUMENT	O. G.	OLD GROUND OR ORIGINAL GROUND
HO.	HOUSE	OH.	OVERHANG OR OVERHEAD
HOR.	HORIZONTAL	O' PASS	OVERPASS
H. P.	HINGE POINT		
HT.	HEIGHT	P	POWER CABLE OR PIPE
H&T	HUB & TACK	P. OR PG.	PAGE
H. W.	HIGH WATER	PAVT.	PAVEMENT
HWY.	HIGHWAY	P. B.	PULL BOX
		PC	POINT OF CURVE (BEGINNING)
		PCC	POINT OF COMPOUND CURVE OR PORTLAND CEMENT CONCRETE
I	INTERSTATE		
I. C.	INCIDENTAL CONSTRUCTION	P. C. S.	PROJECT CONTROL SYSTEM
I. D.	INSIDE DIAMETER	P. E.	PRELIMINARY ENGINEERING
I. E.	INVERT ELEVATION	PEN.	PENETRATION
INC.	INCORPORATED OR INCREMENT	PERF.	PERFORATED
INCL.	INCLUDED	PI	POINT OF INTERSECTION
INSTR.	INSTRUMENT	PL.	PLACE, PLATE OR PLANT
INT.	INTERSECTION	P. L.	PROPERTY LINE
INTCH.	INTERCHANGE	PLAS.	PLASTIC
INV.	INVERT	P. M.	PRINCIPAL MERIDIAN OR PUNCH MARK
I. P.	IRON PIN	P. M. B.	PLANT MIX BASE
IRR.	IRRIGATION	P. M. P.	PERFORATED METAL PIPE
I. R. T. S.	INTERSECTING ROADWAY TERMINAL SECTION	PMS	PLANT MIX SURFACING
		PMT.	PERMIT
JCT.	JUNCTION	POC	POINT ON CURVE
J. P.	JOINT USE POLE	POL	POINT ON LINE
		POS	POINT ON SPIRAL
kg	KILOGRAM	POST	POINT ON SEMI-TANGENT
km	KILOMETER	POT	POINT ON TANGENT
		POVC	POINT ON VERTICAL CURVE
		PP	POWER POLE
L	LENGTH OF CURVE, LITER OR ANGLE IRON		
Lc	LENGTH OF CIRCULAR CURVE		
L. C.	LONG CHORD		
L. D.	LOOP DETECTOR		
LENG.	LENGTH OR LENGTHEN		
LN.	LANE		
Ls	LENGTH OF SPIRAL		
L. S.	LAND SURVEYOR		
LT.	LEFT		

DETAILED DRAWING	
REFERENCE STANDARD SPEC. SECTION 101	DWG. NO. 101-06
ABBREVIATIONS	
EFFECTIVE: DECEMBER 2002	
 MONTANA DEPARTMENT OF TRANSPORTATION  MONTANA CADD	

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PP.	PAGES	SURF.	SURFACE OR SURFACING
PREST.	PRESTRESSED	SURV.	SURVEY
PRIM.	PRIMARY	S. W.	SOUTHWEST OR SIDEWALK
PROC.	PROCESSING		
PROJ.	PROJECT OR PROJECTED	†	METRIC TON
PROT.	PROTECT, PROTECTOR OR PROTECTION	T	TOWNSHIP, TANGENT LENGTH OR PERCENT TRUCKS
PT	POINT OF TANGENT (END OF CURVE)		
PT.	POINT	TAN.	TANGENT
PTW	PRESENT TRAVELED WAY	T. B. C.	TOP BACK OF CURB
PVC	POLYVINYL CHLORIDE	T. B. M.	TEMPORARY BENCH MARK
PVT.	PRIVATE	TBR.	TIMBER
PWR.	POWER (LINES)	TEL.	TELEPHONE
		TEL. C.	TELEPHONE CABLE
O	PEAK DISCHARGE (WATER)	TELG.	TELEGRAPH
QTY.	QUANTITY	TEL. P.	TELEPHONE POLE
		TEMP.	TEMPERATURE OR TEMPORARY
		THK.	THICKNESS
R	RANGE, RADIUS OR RISE	TK.	TACK
RACET	ROAD APPROACH CULVERT END TREATMENT	TOPOG.	TOPOGRAPHIC
R _c	SPIRAL CURVE RADIUS	T. P.	TURNING POINT
RC	RAPID CURING	TR.	TRACT
RCB	REINFORCED CONCRETE BOX	TRANS.	TRANSMISSION LINE OR TRANSITION
RCP	REINFORCED CONCRETE PIPE	TRAV.	TRAVERSE
RCPA	REINFORCED CONCRETE PIPE ARCH	TRIA.	TRIANGULATION
RD.	ROAD	T _s	LENGTH OF TANGENT (CURVE WITH SPIRALS)
RDL.	RADIAL	TS	TANGENT TO SPIRAL
RDWY.	ROADWAY	TT	TRANSMISSION TOWER
REC.	RECORD	TYP.	TYPICAL
REF.	REFERENCE		
REINF.	REINFORCEMENT	U	UNIT
RET. W.	RETAINING WALL	U. G.	UNDERGROUND
RIV.	RIVER	UNCL.	UNCLASSIFIED
R. M.	REFERENCE MONUMENT	U' PASS	UNDERPASS
R. P.	REFERENCE POINT, POST, OR RADIUS POINT	U. S. C. & G. S.	U. S. COAST & GEODETIC SURVEY
R. R.	RAILROAD	U. S. C. E.	U. S. CORPS OF ENGINEERS
RT.	RIGHT OR ROUTE	U. S. F. S.	U. S. FOREST SERVICE
RTE.	ROUTE	U. S. G. S.	U. S. GEOLOGICAL SURVEY
R/W	RIGHT OF WAY	U. S. P. L. S.	U. S. PUBLIC LAND SURVEY
RY.	RAILWAY		
		V	DESIGN SPEED OR VELOCITY
S	RATE OF FULL SUPERELEVATION, SPAN OR SOUTH	V. A. B. M.	VERTICAL ANGLE BENCH MARK
SA.	SATELLITE (FOR TRAVERSE USE)	VC	VERTICAL CURVE
SAN. SEW.	SANITARY SEWER	VC CORR.	VERTICAL CURVE OFFSET CORRECTION
SB	SOUTHBOUND	V. C. M.	VERTICAL CONTROL MONUMENT
SC	SPIRAL TO CURVE OR SLOW CURING	V. C. P.	VITRIFIED CLAY PIPE
SCH.	SCHEDULE	VEH.	VEHICULAR
SDWK.	SIDEWALK	VERT. OR VT.	VERTICAL
S. E.	SOUTHEAST	VIT.	VITRIFIED
SEC.	SECTION, SECOND OR SECONDARY	V. P.	VENT PIPE
SEL.	SELECT	VPC	VERTICAL POINT OF CURVE
S. G. OR SUBGR.	SUBGRADE	VPI	VERTICAL POINT OF INTERSECTION
SH.	SHOULDER	VPT	VERTICAL POINT OF TANGENCY
SHT.	SHEET		
SING.	SINGLE	W	WEST
SIP.	SIPHON	W/	WITH
S. L. D.	SEA LEVEL DATUM	WB	WESTBOUND
SLOT. DR.	SLOTTED DRAIN	W. C.	WITNESS CORNER
SLP. STK.	SLOPE STAKE	W. L.	WATER LINE
SLY.	SOUTHERLY	WLY.	WESTERLY
S. P.	STAND PIPE OR STATE PLANE	W/O	WITHOUT
SPEC. PROV.	SPECIAL PROVISION	W. P.	WING POINT
S. P. H. P.	STEEL PIPE, HIGH PRESSURE	W. S.	WATER SERVICE OR WARPED OR VARIABLE SLOPE
SPK.	SPIKE	WT.	WEIGHT
SO.	SQUARE	W. T.	WATER TABLE
SS	EMULSIFIED ASPHALT	W. V.	WATER VALVE
SSPP	STRUCTURAL STEEL PLATE PIPE	W. W.	WING WALL OR WOVEN WIRE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH		
ST	SPIRAL TO TANGENT	XING.	CROSSING
ST.	STREET	XSEC.	CROSS-SECTION
STA.	STATION		
STD.	STANDARD		
STD. SPEC.	STANDARD SPECIFICATIONS		
STK.	STAKED OR STAKE		
STL.	STEEL		
STM.	STORM DRAIN		
STPD.	STAMPED		
STR.	STRUCTURE		
SUBD.	SUBDIVISION		

DETAILED DRAWING	
REFERENCE STANDARD SPEC. SECTION 101	DWG. NO. 101-07
ABBREVIATIONS	
EFFECTIVE: DECEMBER 2002	
 MONTANA DEPARTMENT OF TRANSPORTATION	 MONTANA CADD

TITLE SHEET

	PRIMARY ROAD **
	PRIMITIVE ROAD
	PROPOSED ROAD
	GRADED ROAD
	BLADED ROAD
	PRIMITIVE ROAD
	GRAVELED ROAD (CADD *)
	PAVED ROAD
	FEDERAL AID ROUTING (ON EXISTING ROAD)
	FEDERAL AID ROUTING (NON-EXISTING ROAD)
	INTERCHANGE
	STRUCTURE
	FREE FERRY
	TOLL FERRY
	HIGHWAY TUNNEL
	PASS
	RAILROAD
	RESERVATION LINE
	STATE & NATIONAL LINE
	COUNTY LINE
	TOWNSHIP & SECTION LINE
	INTERSTATE
	U. S. HIGHWAY
	STATE HIGHWAY (CADD *)
	CITY OR TOWN
	AIR FIELD
	DAM
	BUILDING OR HOUSE
	BRIDGE

** PRIMARY ROADS ARE 2.03 mm WIDE. ALL OTHERS ARE 1.27 mm WIDE.

PROFILE

	FLOWLINE AT ϕ CULVERT
	FLOWLINE AT ϕ IRRIGATION SYPHON
	FLOWLINE AT ϕ CONCRETE BOX CULVERT

CROSS SECTIONS

	POWER POLE (NO. OF WIRES AND VOLTAGE)
	TELEPHONE POLE (NO. OF WIRES)
	TELEGRAPH POLE (NO. OF WIRES)
	GUY POLE
	GUY AND ANCHOR

PLAN

	STATE & NATIONAL LINE
	COUNTY LINE
	CITY OR TOWN BOUNDARIES
	TOWNSHIP LINE
	SECTION LINE (SHOWING CORNER SOLID IF FOUND - OPEN IF NOT FOUND)
	CLOSING CORNER
	MEANDER CORNER
	OWNERSHIP TIE
	PROPERTY CORNER
	EXISTING R/W MONUMENT
	NEW R/W MONUMENT
	PROPERTY LINE
	SECTION LINE
	EXISTING ACCESS
	FULL ACCESS CONTROL
	LIMITED CONTROL
	EXISTING RIGHT-OF-WAY
	HIGHWAY RIGHT-OF-WAY
	RAILROAD RIGHT-OF-WAY
	BASE OR SURVEY LINE
	E OF STAKED LINE WHEN A PROJECTION IS MADE
	RAILROAD
	TRAVELED WAY
	LEVEE OR DIKE (CADD *)
	RETAINING WALL (CADD *)
	PROPOSED RETAINING WALL (CADD *)
	RIPRAP
	GEOTEXTILE PATTERN
	CONCRETE SIDEWALK
	CONCRETE CURB
	EXISTING FENCE
	PROPOSED FENCE
	SNOW FENCE
	PROPOSED SNOW FENCE
	EXISTING GUARDRAIL
	PROPOSED GUARDRAIL
	EXISTING CONCRETE MEDIAN RAIL
	SMALL DRAINAGE
	LARGE DRAINAGE
	RESERVOIR WITH DAM
	LAKE
	MARSH, SWAMP (CADD *)

PLAN

	BLUFFS OR CLIFFS
	WATER'S EDGE
	DEPRESSION
	DEPRESSION OBSCURE
	DITCH BLOCK
	EXISTING DITCH OR FLOW LINE
	PROPOSED DITCH
	FLOW LINE UP HILL
	CULVERT WITH HEADWALL (IN PLACE)
	CULVERT WITHOUT HEADWALL (IN PLACE)
	PROPOSED CULVERT
	EXISTING DROP OR MEDIAN INLET
	PROPOSED DROP OR MEDIAN INLET
	WATER VALVE BOX
	MANHOLE (LABEL AS TO TYPE OR SERVICE)
	PROPOSED MANHOLE
	FIRE HYDRANT
	WATER WELL WELL (CADD *)
	EXISTING CATCH BASIN
	PROPOSED CATCH BASIN
	CONDUIT & WIRING
	POWER CABLE
	EXISTING UNDERGROUND POWER (CADD *)
	EXISTING OVERHEAD POWER (CADD *)
	TELEPHONE OR TELEGRAPH CABLE
	EXISTING UNDERGROUND TELEPHONE (CADD *)
	EXISTING OVERHEAD TELEPHONE (CADD *)
	WATER LINE
	EXISTING WATER LINE (CADD *)
	STORM SEWER
	EXISTING STORM DRAIN (CADD *)
	PROPOSED STORM DRAIN (CADD *)
	SANITARY SEWER
	EXISTING SANITARY SEWER (CADD *)
	PROPOSED SANITARY SEWER (CADD *)
	NATURAL GAS LINE
	EXISTING NATURAL GAS LINE (CADD *)
	GASOLINE OR OIL LINE
	EXISTING GAS PIPE LINE (CADD *)
	EXISTING OIL PIPE LINE (CADD *)
	EXISTING UNDERGROUND FIBER CABLE (CADD *)
	EXISTING UNDERGROUND TV CABLE (CADD *)
	EXISTING UNDERGROUND MISSILE CABLE (CADD *)

PLAN

	SINGLE POST SIGN
	MULTIPLE POST SIGN
	TELEGRAPH POLE
	TELEPHONE POLE
	TELEPHONE PEDESTAL
	POWER POLE
	POWER PEDESTAL
	TROLLEY POLE
	LIGHT POLE
	GUY POLE
	GUY WIRE & ANCHOR
	TRANSMISSION TOWER
	GAS VALVE
	OIL OR GAS WELL
	TANKS
	TREE OR BUSH
	TREE LINE
	HEDGE LINE
	MAILBOX
	EXISTING APPROACH
	PROPOSED APPROACH
	EXISTING CATTLE GUARD
	PROPOSED CATTLE GUARD
	GRAVEL PIT
	SCALES
	MILE POST
	PROJECT MARKER
	STATION MARKER
	CENTERLINE
	DEFLECTION ANGLE
	DEFLECTION ANGLE (CIRCULAR CURVE WITH SPIRALS)
	DEFLECTION ANGLE OF ONE SPIRAL
	NORTH ARROW
	GATE

* SYMBOLOGY USED ON CADD DRAFTED PLANS

DETAILED DRAWING	
REFERENCE	DWG. NO.
STANDARD SPEC.	101-10
SECTION 101	
SYMBOLS	
EFFECTIVE: AUGUST 1999	
	MONTANA CADD